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REPORT

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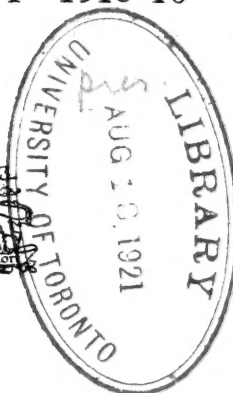
CANADIAN ARCTIC EXPEDITION 1913-18

VOLUME IX: ANNELIDS, PARASITIC WORMS,
PROTOZOANS, ETC.

PART D: GEPHYREA

By RALPH V. CHAMBERLIN

SOUTHERN PARTY—1913-16



OTTAWA
J. de LABROQUERIE TACHÉ
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

Report of the Canadian Arctic Expedition 1913-18.

VOLUME IX: ANNELIDS, PARASITIC WORMS, PROTOZOANS, ETC.

Part A: OLIGOCHAETA.

Lumbriculidae. By Frank Smith.

Enchytraeidae. By Paul S. Welch.....(*Issued September 29, 1919.*)

Part B: POLYCHAETA. By Ralph V. Chamberlin.....(*In press.*)

Part C: HIRUDINEA. By J. P. Moore.....(*In preparation.*)

Part D: GEPHYREA. By Ralph V. Chamberlin.....(*In press.*)

Part E: ACANTHOCEPHALA. By H. J. Van Cleave.....(*Issued April 7, 1920.*)

Part F: NEMATODA. By N. A. Cobb.....(*In preparation.*)

Part G: TREMATODA. By A. R. Cooper.....(*In preparation.*)

Part H: CESTODA. By A. R. Cooper.....(*In preparation.*)

Part I: TURBELLARIA. By A. Hassell.....(*In preparation.*)

Part J: GORDIACEA.

Part K: NEMERTINI.

Part L: SPOROZOA. By J. W. Mavor.....(*In preparation.*)

Part M: FORAMINIFERA. By J. A. Cushman.....(*Issued February 6, 1920.*)

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The Gephyrea collected by the Canadian Arctic Expedition, 1913-18.

BY RALPH V. CHAMBERLIN

Museum of Comparative Zoology, Cambridge, Mass.

The collection embraces but four specimens of the Gephyrea, these having been taken from the stomachs of fish at two widely separated stations. All belong to one species, the widespread northern *Priapulus humanus* (Linné). In addition some other Gephyreans were received for study from the Geological Survey, and notes upon these are here included. They represent six species, the *Priapulus* mentioned above, and five Sipunculids,—*Physcosoma agassizi* (Keferstein), *Physcosoma japonicum* (Grube), *Phascolion strombi* (Montagu), a previously undescribed *Phascolosoma*, and *Phascolosoma eremita* (Sars).

PRIAPULIDAE.

Priapulus humanus (Linné).

1758. *Priapus humanus* LINNÉ. Syst. Nat., ed. 10, p. 656.

1766. *Holothuria priapus* LINNÉ. Syst. Nat., ed. 12, p. 1901.

1816. *Priapulus caudatus* LAMARCK. Hist. Nat. Anim. sans Vertéb., p. 77.

1845. *Priapulus hibernicus* MCCOY. Ann. Mag. Nat. Hist., ser. 1, 15, p. 272.

Two specimens were taken from the stomach of a nine and a half inch long female *Gymnocanthus pistilliger* Gill at Bernard harbour, Northwest Territories, June 14, 1916, at Station 49 f. The larger of these is 6 centimeters long, inclusive of the fully protruded proboscis and exclusive of the branchial filaments, with a diameter of 1.1 centimeters. The second specimen is only about 1.8 centimeters long. Two other small specimens were taken from a *Pleuronectes stellatus* Pall. at Grantley harbour, Alaska, July 31, 1913 (Station 20 d). Besides the specimens secured by the Canadian Arctic Expedition there is in the collection a fine specimen, 10 centimeters long, taken on the beach of Hudson bay at Fort Churchill, Keewatin, by James M. Macoun, October, 1910.

SIPUNCULIDAE.

Phascolosoma hudsonianum, n. sp.

Type specimen.—Catalogue No. 101, Victoria Memorial Museum, Ottawa. One specimen.

Body proper, i.e., from the anus caudad, slenderly subpyriform, with a conspicuous pointed caudal appendage abruptly set off, anteriorly uniform in width with the proboscis. In the type the length to the tip of caudal appendage is 3.4 times the greatest width. Body about one and a half times the length of the proboscis. Body light brown, in general appearing shining and of a somewhat pearly lustre; but papillae are visible upon close inspection even with the naked eye over the entire surface, the papillae obviously densest at caudal end and over the narrow appendage and near level of and just in front of the anus where also the skin is more obviously reticulate; skin more strongly rugose on caudal surface. Papillae subconic with base broad. No hooks present on the pro-

boscis, the latter more rugose toward tentacles. Tentacles in several rows. Openings of segmental organs distinct. Body wall thin, in part translucent, the inner surface with pearly lustre, muscle layer uniform, with no trace of division into strands. Four retractor muscles present, of which the dorsals are very much more slender posteriorly than the ventrals: ventrals taking their origin about midway between anus and caudal tip of body and the dorsals about five-twelfths the distance from anus to level of origin of ventrals. Segmental organs elongate, free, opening near level of anus. Coils of intestine numerous, wholly free excepting anteriorly. Total length of type, inclusive of extended proboscis, 116 mm.: of body proper from anus to caudal tip 70 mm.; distance from anus to tentacles, 46 mm. Greatest width 17 mm; width at level of anus, 7.3 mm. Length of caudal appendage, 7 mm.; width at base, near 3.6 mm.

LOCALITY.—Hudson bay: Fort Churchill, October, 1910. James M. Macoun. One specimen.

Phascolosoma eremita (Sars).

1851. *Sipunculus eremita* SARS, Nyt. Mag. for Naturvidensk., p. 197.

1865. *Sipunculus (Phascolosomum) borealis* QUATREFAGES, Hist. nat. Anneles, 2, p. 620.

1867. *Phascolosoma boreale* KEFERSTEIN, Nach. d. k. Ges. d. Wiss. Göttingen, No. 7, p. 206.

1877. *Phascolosoma eremita* KOREN and DANIELSSEN, Fauna litt. Norvegiae, 3d Heft., p. 134 pl. 15 f. 45.

A form widespread in northern regions, having been recorded at various stations from Greenland eastward to the Kara sea, the range extending southward along the European coast to the North sea and along the North American coast to Massachusetts or in deeper water even farther south (40° N. lat.) A specimen was collected by the biological launch *Prince* at Station 4, in Passamaquoddy bay, N.B., October 8, 1917, at a depth of 25 to 30 meters.

Phascolion strombi (Montagu).

1804. *Sipunculus strombus* G. MONTAGU, Trans. Linn. Soc. London, 7, p. 74.

1828. *Siphunculus dentalii* GRAY, Spicilegia zoologica, p. 8.

1841. *Sipunculus bernhardus* FORBES, Hist. British Starfishes, p. 251.

1843. *Sipunculus capitatus* H. RATHKE, Nova Scotia Acad. Leop. Car. 29, p. 143, pl. 6, fl. 20-23.

1844. *Sipunculus (Phascolosoma) concharum* OERSTED, De regionibus marinis, p. 80; also Krøyer's Naturh. Tidskr., 1844, p. 419.

1865. *Sipunculus (Cryptosomum) caementarium* QUATREFAGES, Hist. nat. des Anneles, 2, p. 628.

1867. *Phascolosoma hamulatum* PACKARD, Mem. Bost. Soc. Nat. Hist. 2, p. 290.

1873. *Phascolosoma tubicola* VERRILL, Amer. Journ. Sci. and Arts, ser. 3, 5, p. 99.

1875. *Phascolion spitzbergense* THEEL, Bihang till k. Svenska Vet. Akad. Handl., 3, p. 16, pl. 1, ff. 2, 3.

A species widespread and abundant in the north Atlantic and Arctic regions. In the collection submitted for study is a number of specimens of this form collected by the biological launch *Prince* in Passamaquoddy bay, N.B. They were taken on a muddy bottom at a depth of twenty-five to thirty meters on October 8, 1917, and were found inhabiting shells of *Apporrhais occi-*

dentalis Beck and *Thais lapillus* Linné. Also several specimens apparently of this species but which unfortunately had become dried out through evaporation of the preserving fluid were found in tubes of *Cistenides granulata* in Dolphin and Union strait, (Canadian Arctic Expedition Station 43 a, b), September, 1915, 25 to 50 fathoms.

Physcosoma japonicum (Grube).

1877. *Phascolosoma Japonicum* GRUBE, Jahresber. der Schles. Ges. vaterl. Cultur. 54, p. 73.

1883. *Phymosoma japonicum* SELENKA. Die Sipunculiden, p. 76. pl. 2. f. 18-19. pl. 10. f. 145-146.

A number of nicely preserved specimens of this species were collected by W. Spreadborough at Ucluelet on the west side of Vancouver island, British Columbia, in May, 1909. This species has been previously recorded, aside from the shores of Japan, from Mergui on the gulf of Bengal, Australia (Sydney), Fiji, and the Queen Charlotte islands, (Sec. Hérubel, Mem. Soc. Zool. France, 1907, p. 218).

Physcosoma agassizii (Keferstein).

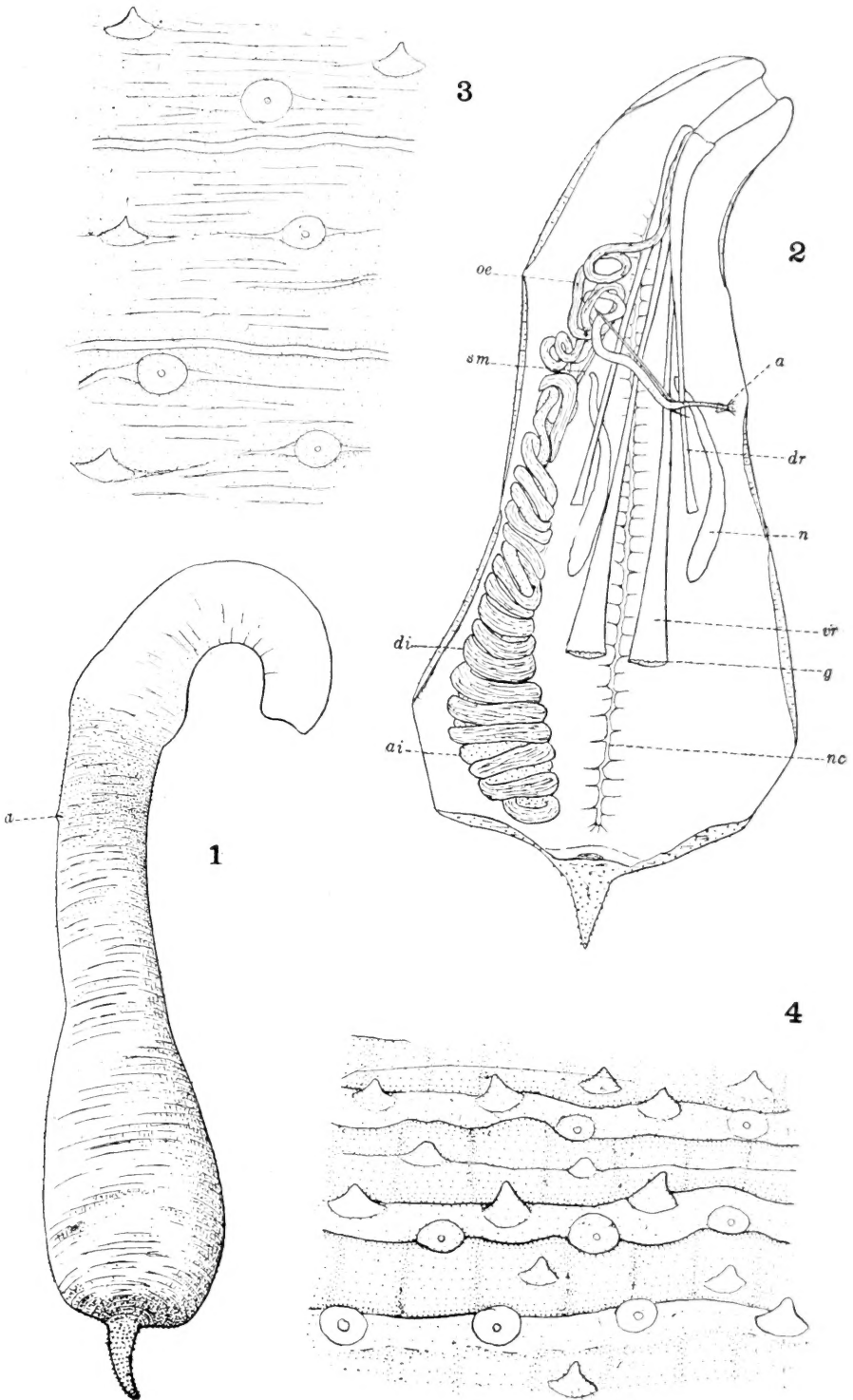
1866 *Phascolosoma agassizii* KEFERSTEIN, Nach. k. Ges. Wiss. Göttingen, p. 4.

A well preserved partly grown specimen of this species is in the collection transmitted for study along with that of the Canadian Arctic Expedition. The colour markings are exceptionally distinct, these consisting of large black pigment spots on the dorsal surface of the body and of parallel transverse stripes across the dorsal and upper lateral surface of the proboscis, those just proximad of the tentacles being deepest. The papillae and other external features are typical.

LOCALITY.—British Columbia: Queen Charlotte islands, Skidegate channel, low tide. 1910. Wm. Spreadborough, collector.

EXPLANATION OF PLATE.

- Fig. 1. *Phascolosoma hudsonianum*, n. sp. side view, distal end of proboscis retracted.
- Fig. 2. *Phascolosoma hudsonianum*, n. sp., dissection, dorsal view. a. anus; oe. oesophagus; di. descending coils of intestine; ai. ascending coils of intestine; sm. spiral muscle; dr, dorsal retractors; vr, ventral retractors; g, reproductive festoons; n, nephridia; nc, nerve cord.
- Fig. 3. *Phascolosoma hudsonianum*, n. sp., portion of skin about two centimeters from caudal end.
- Fig. 4. *Phascolosoma hudsonianum*, n. sp., portion of skin from caudal surface.



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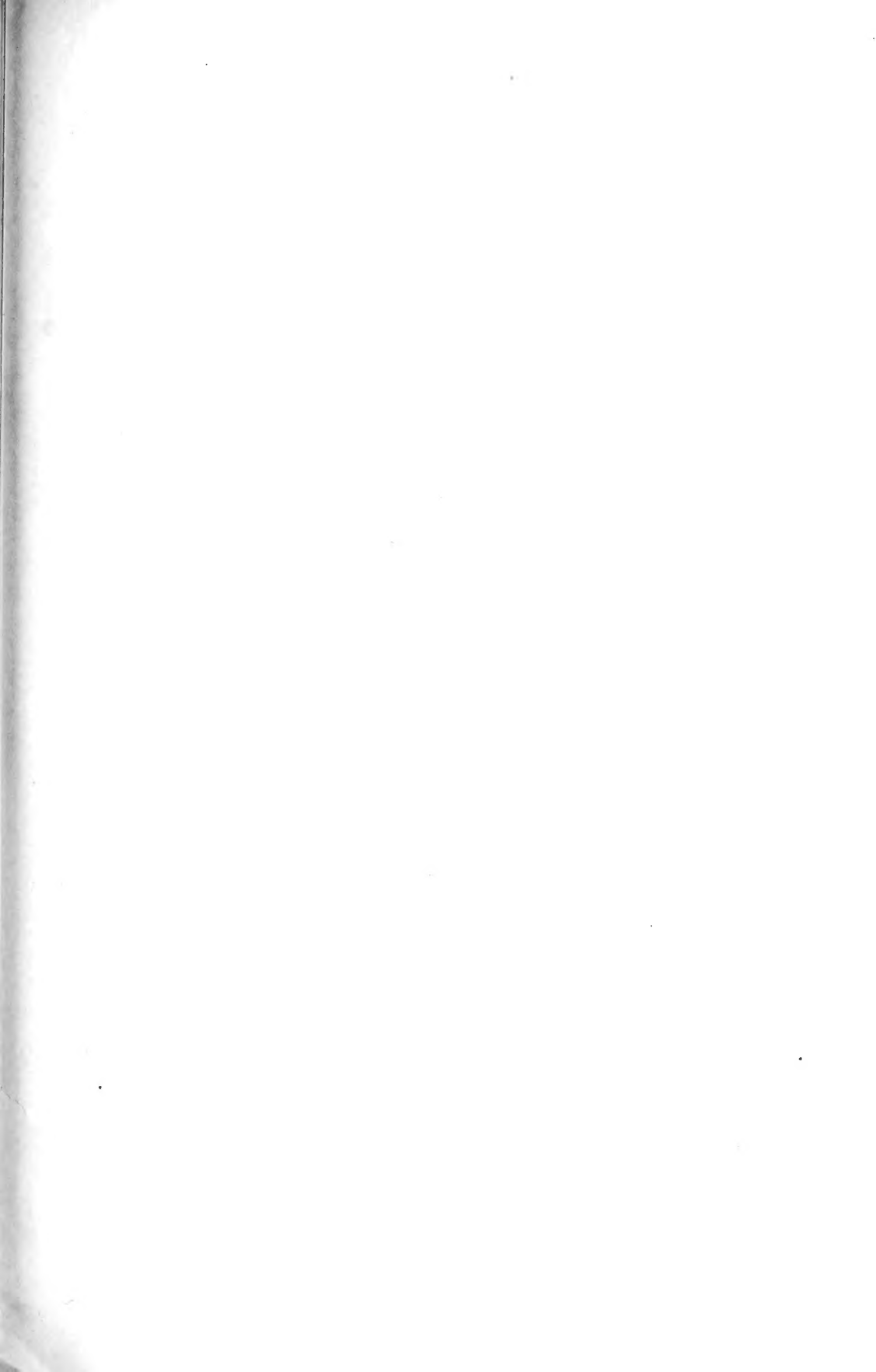
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Part H: Cladocera. By Chancey Juday. (*In press*).

Part I: Ostracoda. By R. W. Sharpe. (*In preparation*).

Part J: Freshwater Copepoda. By C. Dwight Marsh. (*In press*).

Part K: Marine Copepoda. By A. Willey. (*In press*).

Part L: Parasitic Copepoda. By Chas. B. Wilson. (*In press*).

Part M: Cirripedia. By H. A. Pilsbry. (*In preparation*).

Volume VIII: Molluscs, Echinoderms, Coelenterates, Etc.

Part A: Mollusks, Recent and Pleistocene. By Wm. H. Dall. (*Issued*).

Part B: Cephalopoda and Pteropoda. By S. S. Berry and W. F. Clapp. (*In preparation*).

Part C: Echinoderms. By Austin H. Clark. (*In press*).

Part D: Bryozoa. By R. C. Osburn. (*In preparation*).

Part E: Rotatoria. By H. K. Harring. (*In preparation*).

Part F: Chaetognatha. By A. G. Huntsman. (*In preparation*).

Part H: Medusae and Ctenophora. By H. B. Bigelow. (*In press*).

Part I: Hydroids. By McLean Fraser. (*In preparation*).

(Porifera, Actinozoa, and Alcyonaria: material small in amount, and no specialists selected).

Volume IX: Annelids, Parasitic Worms, Protozoans, Etc.

Part A: Oligochaeta. By Frank Smith and Paul S. Welch. (*Issued*).

Part B: Polychaeta. By Ralph V. Chamberlin. (*In press*).

Part C: Hirudinea. By J. P. Moore. (*In preparation*).

Part D: Gephyrea. By Ralph V. Chamberlin. (*In press*).

Part E: Acanthocephala. By H. J. Van Cleave. (*In press*).

Part F: Nematoda. By N. A. Cobb. (*In preparation*).

Part G: Trematoda. By A. R. Cooper. (*In preparation*).

Part H: Cestoda. By A. R. Cooper. (*In preparation*).

Part I: Turbellaria. By A. Hassell. (*In preparation*).

Part J: Gordiacea.

Part K: Sporozoa. By J. W. Mavor. (*In preparation*).

Part M: Foraminifera. By J. A. Cushman. (*Issued*).

Volume X: Plankton, Hydrography, Tides, Etc.

Part A: Plankton. Marine Diatoms.

Part B: Tidal Observations. By W. Bell Dawson. (*In press*).

Hydrography.

